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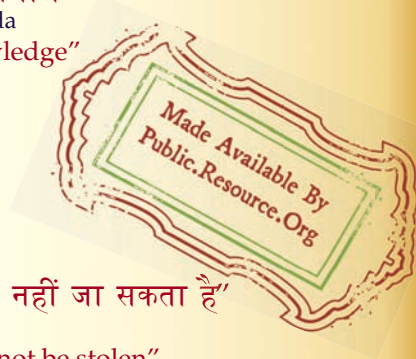
IS 2582-2 (1987): Machine tools - Spindle noses and face plates - Sizes for interchangeability, Part 2: Camlock types [PGD 2: Machine Tool Elements and Holding Devices]



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“Knowledge is such a treasure which cannot be stolen”

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IS 2582 (Part 2) : 1987

ISO 702/2 : 1975

(Reaffirmed 2001)

Indian Standard
**MACHINE TOOLS — SPINDLE NOSES AND
FACE PLATES — SIZES FOR INTERCHANGEABILITY**

PART 2 CAMLOCK TYPE

(Second Revision)

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BUREAU OF INDIAN STANDARDS

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NEW DELHI 110002**

September 1990

Price Group 6

Indian Standard
**MACHINE TOOLS—SPINDLE NOSES AND
FACE PLATES—SIZES FOR INTERCHANGEABILITY**
PART 2 CAMLOCK TYPE
(Second Revision)

NATIONAL FOREWORD

This Indian Standard (Part 2) (Second Revision) which is identical with ISO 702/2 : 1975 'Machine tools—Spindle noses and face plates—Sizes for interchangeability—Part 2: Camlock type', issued by the International Organization for Standardization (ISO), was adopted by the Bureau of Indian Standards on 23 November 1987 on the recommendation of the Machine Tools, Machine Tool Elements and Wood-Working Machines Sectional Committee (EDC 11) and approval of the Mechanical Engineering Division Council.

This standard was first issued in 1963. After the formulation of ISO/R 702, this standard was revised and split into three parts in 1972. The ISO recommendations have since been replaced by ISO 702/1, ISO 702/2 and ISO 702/3. With a view to achieving international dimensions which are basic in nature, this revision of IS 2582 (Part 2) and adoption of ISO 702/2:1975 has been considered.

The text of the ISO standard has been approved as suitable for publication as Indian Standard without deviations. Certain conventions are, however, not identical to those used in Indian Standards. Attention is particularly drawn to the following :

- a) Wherever the words 'International Standard' appear, referring to this standard, they should be read as 'Indian Standard'.
- b) Comma (,) has been used as decimal marker while in Indian Standards, the current practice is to use a point (.) as the decimal marker.
- c) Inch dimensions given in the ISO Standard in clauses 3.1.2, 3.2.2, 3.3.2, 3.4.2 only 3.5.2 have been excluded as these are not prevalent in our country.

ADDITIONAL INFORMATION

Spindle noses of type A and of Bayonet type are covered in Parts 1 and 3 respectively of this standard as follows :

IS 2582 (Part 1) : 1987/ISO 702/1:1975 Machine tools—Spindle noses and face plates—
Sizes for Interchangeability: Part 1 Type A

IS 2582 (Part 3) : 1987/ISO 702/3 : 1975 Machine tools—Spindle noses and face plates—
Sizes for interchangeability: Part 3 Bayonet type

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1 SCOPE AND FIELD OF APPLICATION

This International Standard specifies the sizes for interchangeability of Camlock-type lathe spindle noses and corresponding face plates.

NOTE — The types "A" and "bayonet" are dealt with in parts I and III respectively.

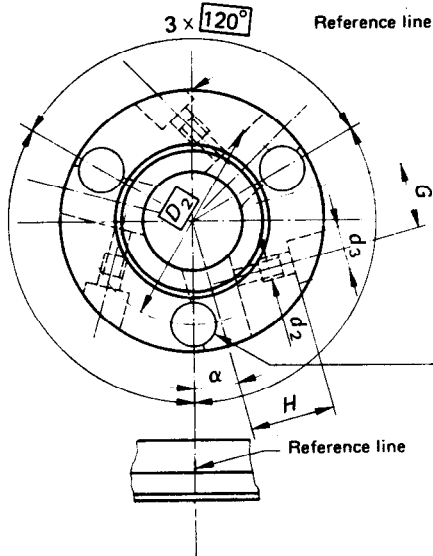
2 INTERCHANGEABILITY

Although internal mounting components and assembly screws are not respectively interchangeable as they may conform with either metric or inch series, there is complete interchangeability between metric spindle noses and face plates in inches and vice versa.

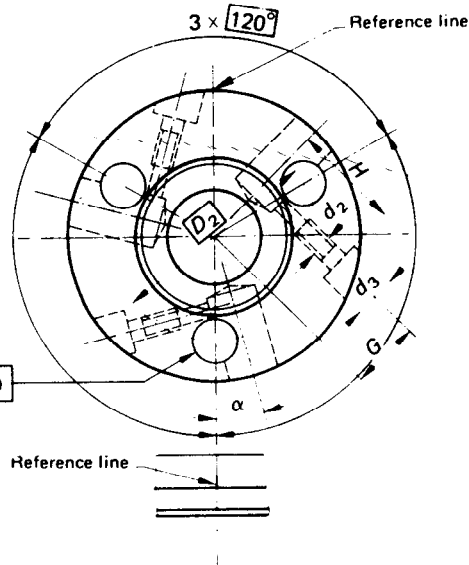
3 SIZES FOR INTERCHANGEABILITY

3.1 Spindle noses

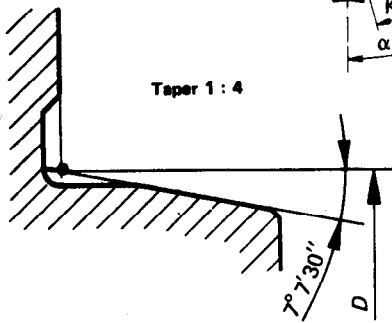
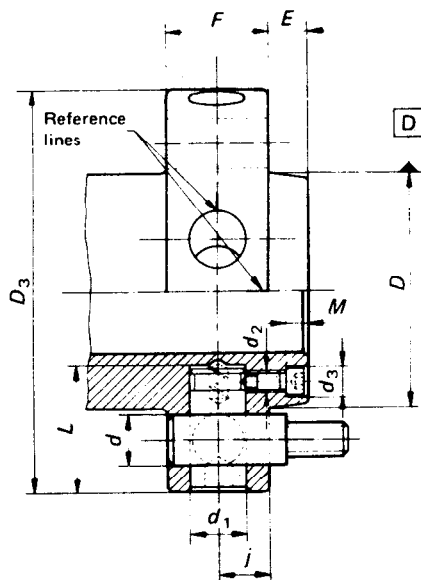
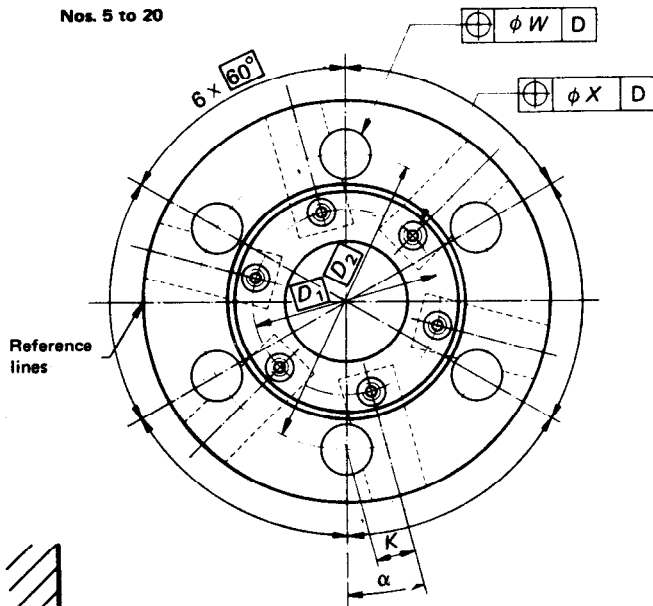
No. 3



No. 4



Nos. 5 to 20

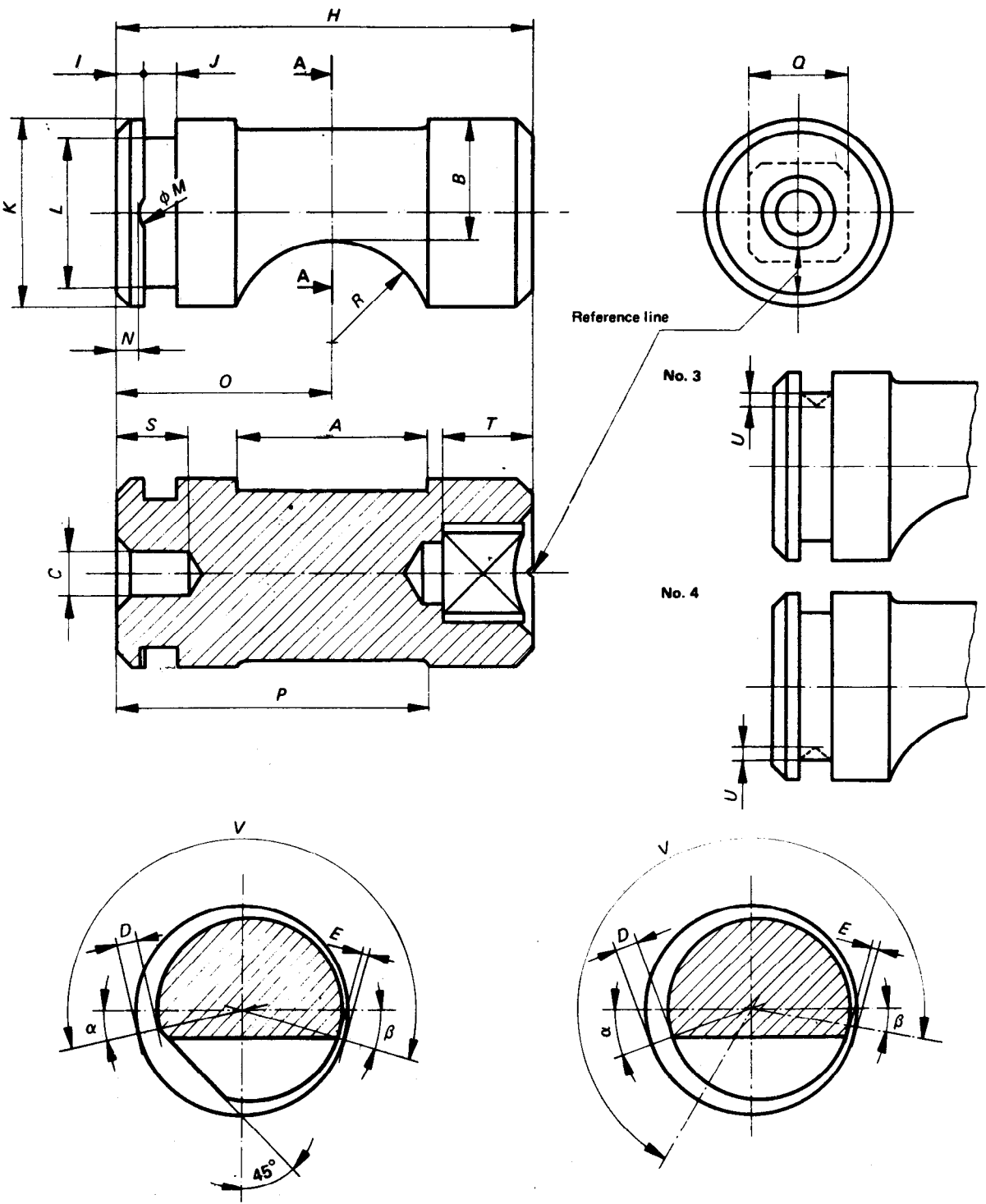


3.1.1 Sizes in millimetres

Dimension \ No.	3	4	5	6	8	11	15	20
D	53,975	63,513	82,563	106,375	139,719	196,869	285,775	412,775
tol.	+ 0,008 0	+ 0,008 0	+ 0,010 0	+ 0,010 0	+ 0,012 0	+ 0,014 0	+ 0,016 0	+ 0,020 0
D_1			65	82	114	172	258	380
D_2	70,6	82,6	104,8	133,4	171,4	235,0	330,2	463,6
D_3	92	117	146	181	225	298	403	546
d + 0,05 0	15,1	16,7	19,8	23,0	26,2	31,0	35,7	42,1
d_1 H8	19	19	22	26	29	32	35	42
d_2	M 8	M 8	M 6	M 8	M 8	M 8	M 10	M 10
d_3	15,5	15,5	10,5	13,5	13,5	13,5	16,5	16,5
E	11	11	13	14	16	18	19	21
F min.	32	34	38	45	50	60	70	82
G $\pm 0,05$	22,6	27,0						
H $\pm 0,2$	30	40						
J	17,5	17,5	20,6	23,8	27,0	31,8	36,5	42,9
K $\pm 0,1$	11,1	11,1	13,5	15,9	18,25	21,45	24,6	28,6
L + 0,2 0	27,5	36	46	57	64	75	84	94
M			7	9	9	9	11	11
W	0,1	0,15	0,15	0,15	0,15	0,15	0,15	0,15
X	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2
α	18° 18,6'	15° 36'	14° 55'	13° 46'	12° 18'	10° 30'	8° 35'	7° 05'

NOTE — General tolerance for untoleranced dimensions : $\pm 0,4$ mm.

3.2 Cams



Section A-A

For No. 3 only $V = 210^\circ$

For Nos. 4 to 20 $V = 250^\circ$

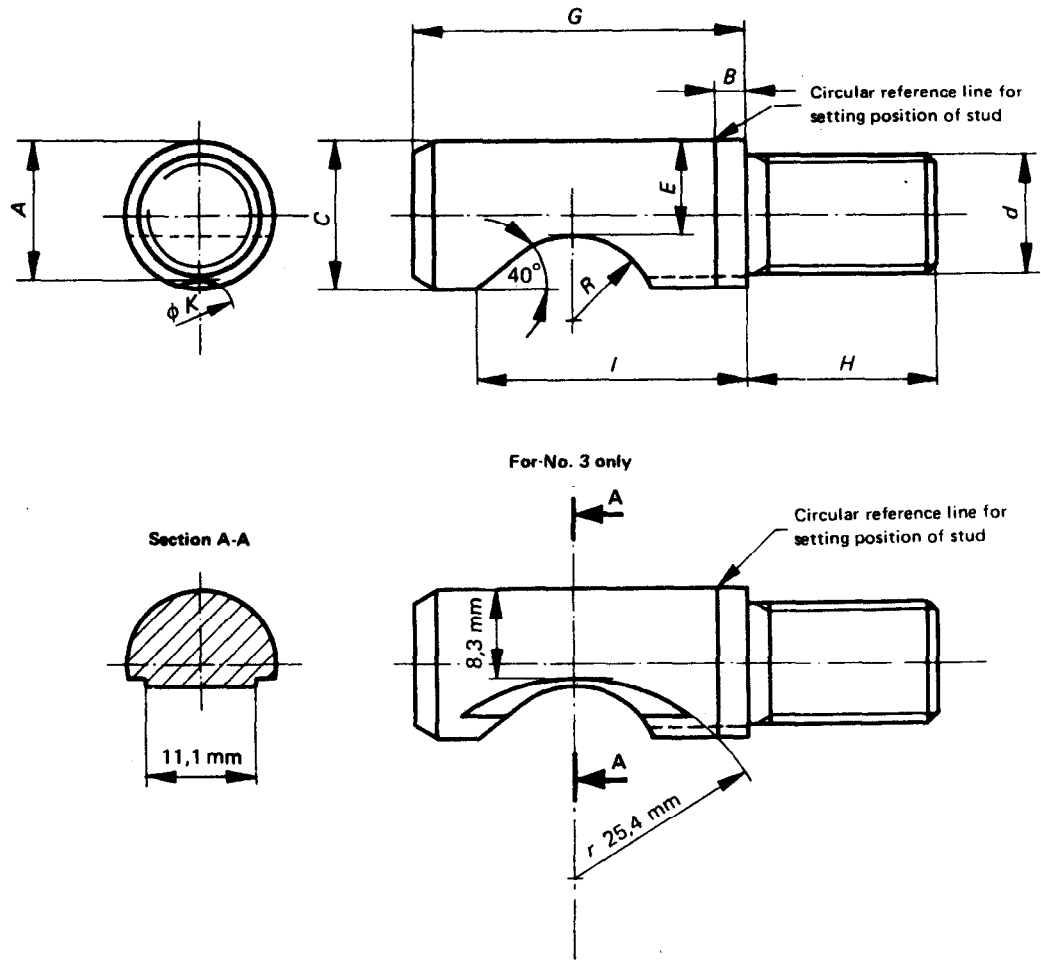
3.2.1 Sizes in millimetres

Dimension \ No.	3	4	5	6	8	11	15	20
A min.	13	17	22	25	28	32	37	43
$B \begin{smallmatrix} 0 \\ -0,2 \end{smallmatrix}$	13,4	11,9	14,2	16,7	18,9	21,2	23,5	27,8
C			7	10	10	10	10	10
$D \begin{smallmatrix} +0,3 \\ 0 \end{smallmatrix}$	1,65	1,60	1,45	2,56	2,46	2,44	2,35	3,10
$E \begin{smallmatrix} +0,1 \\ 0 \end{smallmatrix}$	0,15	0,15	0	0,45	0,36	0,28	0,20	0,50
$H \begin{smallmatrix} 0 \\ -0,1 \end{smallmatrix}$	26,5	35	45	56	63	73	82	92
$I \pm 0,1$	2,2	2,2	3,0	4,2	5,3	8,7	6,0	6,0
J	3,6 $\pm 0,05$	3,6 $\pm 0,05$	5,0 $\pm 0,1$	6,5 $\pm 0,1$	6,5 $\pm 0,1$	6,5 $\pm 0,1$	8,5 $\pm 0,1$	8,5 $\pm 0,1$
$K \begin{smallmatrix} - \\ e 8 \end{smallmatrix}$	19	19	22	26	29	32	35	42
L	13 $\pm 0,2$	13 $\pm 0,2$	14	17	21	24	27	33
$M \pm 0,05$			4,5	6	6	6	8	8
$N \pm 0,1$			2,0	2,85	3,95	7,35	5,2	5,2
$O \pm 0,2$	14,9	16,7	22,4	30,2	33,2	39,5	43,6	48,4
P	21,4	26,5	35,0	43,0	49,0	59,0	62,0	69,0
$Q \begin{smallmatrix} D 12 \end{smallmatrix}$	8	10	11	12	14	17	17	22
R	7,5	9,5	11,1	12,7	14,2	16,7	19,0	22,2
S			13	15	15	15	15	15
T	8	9	11	12	14	16	16	20
U	1,2	1,2						
Slope on V*	1,60	1,90	1,90	2,64	2,64	2,64	2,64	3,18
β	15°	10°	10°	10°	10°	15°	15°	15°
α	15°	15°	15°	20°	20°	20°	20°	20°

* See tolerance on dimensions D and E.

NOTE — General tolerance for untoleranced dimensions : $\pm 0,4$ mm.

3.3 Studs



3.3.1 Sizes in millimetres

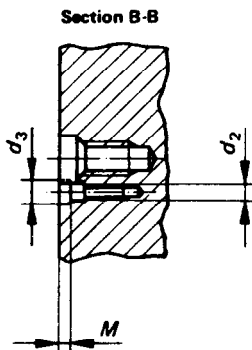
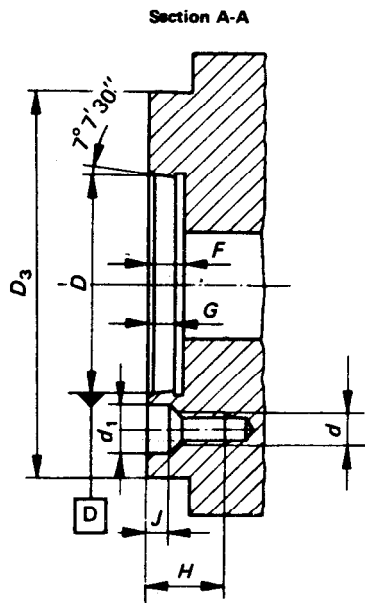
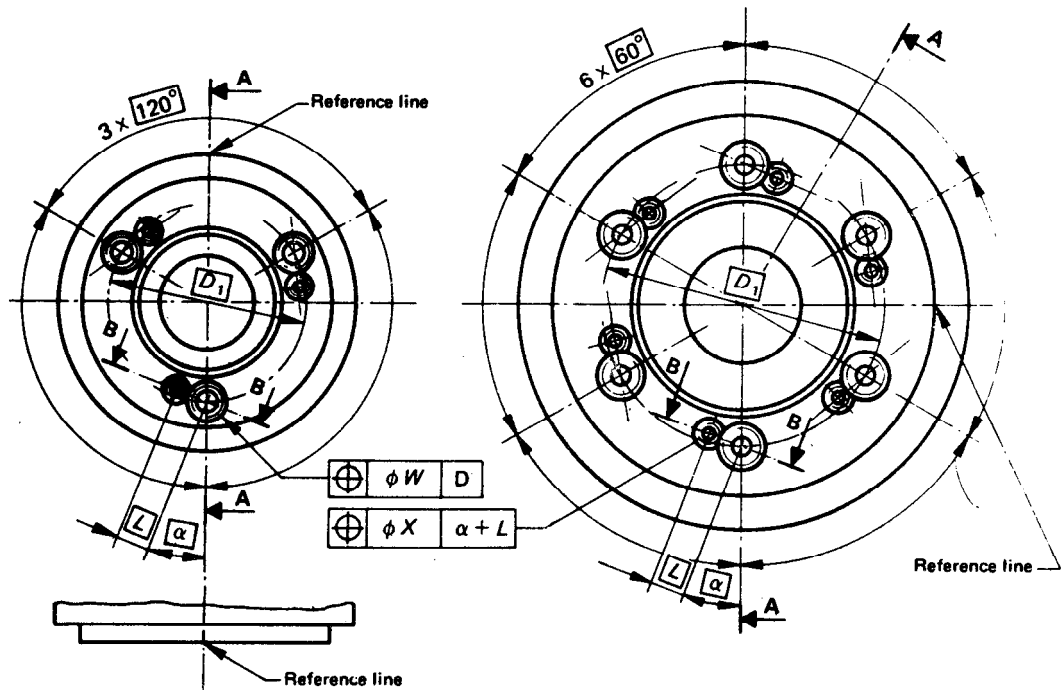
Dimension \ No.	3	4	5	6	8	11	15	20
$A \pm 0,1$	12,7	13,5	16,5	19,6	23,2	26,8	32,0	38,5
$B \pm 0,2$	4,2	4,8	4,8	4,8	4,8	6,4	6,4	6,4
$C \begin{smallmatrix} 0 \\ -0,1 \end{smallmatrix}$	14,3	15,9	19,0	22,2	25,4	30,2	34,9	41,3
d	M 10 $\times$ 1	M 10 $\times$ 1	M 12 $\times$ 1	M 16 $\times$ 1,5	M 20 $\times$ 1,5	M 22 $\times$ 1,5	M 24 $\times$ 1,5	M 27 $\times$ 2
$E \pm 0,1$	8,7	9,5	11,9	14,3	16,7	20,6	24,6	28,6
G	35	37	43	49	55,5	67	76	89
H	19	19	22	27	30,5	35	40	44
$I \pm 0,2$	30,0	31,0	35,7	40,5	44,5	53,2	58,7	69,0
K	11	11	11	14	14	14	14	14
R	9,5	9,5	11,25	12,7	14,3	15,9	17,5	20,6

NOTE — General tolerance for untoleranced dimensions : $\pm 0,4$ mm.

3.4 Face plates

Nos. 3 and 4

Nos. 5 to 20



3.4.1 Sizes in millimetres

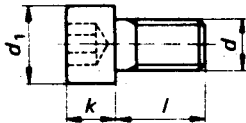
No. Dimension	3	4	5	6	8	11	15	20
<i>D</i>	53,975	63,513	82,563	106,375	139,719	196,869	285,775	412,775
tol.	+ 0,003 − 0,005	+ 0,003 − 0,005	+ 0,004 − 0,006	+ 0,004 − 0,006	+ 0,004 − 0,008	+ 0,004 − 0,010	+ 0,004 − 0,012	+ 0,005 − 0,015
<i>D</i> ₁	70,6	82,6	104,8	133,4	171,4	235,0	330,2	463,6
<i>D</i> ₃	92	117	146	181	225	298	403	546
<i>d</i>	M 10 × 1	M 10 × 1	M 12 × 1	M 16 × 1,5	M 20 × 1,5	M 22 × 1,5	M 24 × 1,5	M 27 × 2
<i>d</i> ₁	14,6	16,2	19,4	22,6	25,8	30,6	35,4	41,6
<i>d</i> ₂	M 6	M 6	M 6	M 8	M 8	M 8	M 8	M 8
<i>d</i> ₃	10,5	10,5	10,5	13,5	13,5	13,5	13,5	13,5
<i>F</i> min.	13	13	15	16	18	20	21	23
<i>G</i>	10	10	12	13	14	16	17	19
<i>H</i>	26	28	30	35	38	45	50	55
<i>J</i>	7	8	8	9,5	9,5	13	13	13
<i>L</i>	11,0	11,0	12,5	15,5	17,5	18,7	21,5	24,8
<i>M</i>	7	7	7	9	9	9	9	9
<i>W</i>	0,1	0,15	0,2	0,2	0,2	0,2	0,2	0,2
<i>X</i>	0,2	0,2	0,2	0,2	0,2	0,2	0,2	0,2
<i>α</i>	18° 18,6′	15° 36′	14° 55′	13° 46′	12° 18′	10° 30′	8° 35′	7° 05′

NOTE – General tolerance for untoleranced dimensions : ± 0,4 mm.

3.5 Accessories for spindle noses and face plates

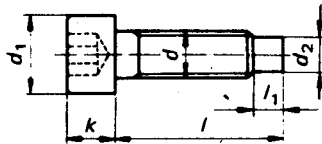
3.5.1 Sizes in millimetres

3.5.1.1 HEXAGON SOCKET HEAD SCREW FOR STUDS



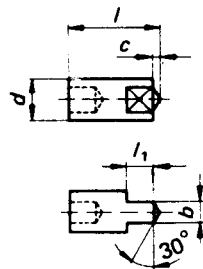
No. Dimension	3	4	5	6	8	11	15	20
d	M 6	M 6	M 6	M 8	M 8	M 8	M 8	M 8
d ₁	10	10	10	13	13	13	13	13
k	6	6	6	8	8	8	8	8
l	12	12	12	14	14	14	14	14

3.5.1.2 HEXAGON SOCKET HEAD SCREW FOR CAMS



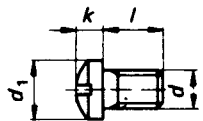
No. Dimension	3	4	5	6	8	11	15	20
d			M 6	M 8	M 8	M 8	M 10	M 10
d ₁			10	13	13	13	16	16
d ₂ max.			4,5	6	6	6	8	8
k			6	8	8	8	10	10
l			19	20	23	28	30	35
l ₁			4	5	5	5	5	5

3.5.1.3 STOP-BOLT FOR CAMS



No. Dimension	3	4	5	6	8	11	15	20
b ⁰ _{-0,05}	3,5	3,5						
c	0,8	0,8						
d	6,3	6,3						
l ⁰ _{-0,2}	14,4	14,4						
l ₁	4,8	4,8						

3.5.1.4 CHEESE HEAD SCREW FOR CAMS



No. Dimension	3	4	5	6	8	11	15	20
d	M 8	M 8						
d ₁ max.	15	15						
k max.	5,6	5,6						
l ± 0,2	8	18						

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